

CLAIMS

1 – 78. (Canceled)

79. **(Currently Amended)** A filter device for percutaneous insertion into a blood vessel during a procedure, the filter device comprising:

(a) a guide member comprising a distal end, a proximal end, and a lumen extending from the distal end to the proximal end;

(b) means for filtering material from a blood stream, said means being disposed within said lumen of said guide member and including an expansion frame supporting a filter mesh;

(c) means for deploying said means for filtering from said lumen of said guide member into the blood stream in the blood vessel and retracting said means for filtering upon completing the procedure; and

(d) ~~an expandable member a stent, coupled to~~ supported by an outside surface of the guide member, that is sized and configured to be inserted into a stenotic lumen of the blood vessel and to expand from an unexpanded dimension to an expanded dimension that is greater than the unexpanded dimension, ~~such that the stenotic lumen of the blood vessel is less stenotic after expansion of the expandable member within the blood vessel than before the expansion.~~

80. **(Original)** A filter device as recited in claim 79, wherein said means for deploying comprises an actuating assembly.

81. **(Original)** A filter device as recited in claim 80, wherein said actuating assembly comprises an actuating member and an actuating element.

82. **(Original)** A filter device as recited in claim 81, wherein said actuating element is moveable by a human.

83. **(Original)** A filter device as recited in claim 81, wherein said actuating element is coupled to said guide member.

84 – 106. **(Canceled)**

107. **(Currently Amended)** A restraining mechanism configured to prevent a plurality of struts of a filter device from extending outwardly prior to deploying a filter of the filter device, the restraining mechanism comprising:

(a) a sleeve adapted to be disposed substantially at a distal end of the filter device, said sleeve being adapted to apply a restraining force to the plurality of struts of the filter device to prevent the plurality of struts from extending outwardly;

(b) a balloon supported by the sleeve and connected in communication with a balloon inflation lumen of the sleeve, the balloon being sized and configured to be inserted into a stenotic lumen of a body vessel and to expand from an unexpanded dimension to an expanded dimension that is greater than the unexpanded dimension, such that the stenotic lumen of the body vessel is less stenotic after expansion of the expandable member within the body vessel than before the expansion; ~~and~~

(c) a stent mounted around the sleeve; and

(ed) at least one actuating member coupled to said sleeve, said at least one actuating member being adapted to release said restraining force of said sleeve and enable the plurality of struts of the filter device to extend outwardly.

108. **(Original)** A restraining mechanism as recited in claim 107, wherein said at least one actuating member is adapted to cause said sleeve to move in a proximal direction upon moving said at least one actuating member in said proximal direction.

109 – 120. **(Canceled)**

121. **(Previously Presented)** The filter device of Claim 79, wherein the means for deploying and retracting the means for filtering is configured to collapse the expansion frame for retracting said means for filtering.

122. **(Previously Presented)** The filter device of Claim 79, wherein the expansion frame includes a plurality of struts supported by a guide wire extending at least partially through the lumen of the guide member.

123. **(Previously Presented)** The filter device of Claim 122, wherein the filter mesh includes a plurality of openings smaller than a plurality of spaces defined between the struts.

124. **(Previously Presented)** The filter device of Claim 123, wherein the filter mesh is draped over and attached to the plurality of struts.

125. **(Previously Presented)** The filter device of Claim 122, wherein the struts extend radially and longitudinally with respect to a longitudinal axis of the guide wire.

126. **(Canceled)**

127. **(Previously Presented)** The filter device of Claim 107, wherein ~~a the stent, is~~ separate from the plurality of struts, ~~and~~ is compressed around the balloon.

128. **(Canceled)**

129. **(Currently Amended)** A filter device for insertion into a blood vessel downstream of an obstruction within the blood vessel, the filter device comprising:

an introducer sheath having a lumen extending at least through a distal end of the introducer sheath, said introducer sheath having a diameter small enough to extend down the blood vessel past the obstruction;

a guide wire including a longitudinal axis wherein the guide wire is configured to slidably extend through the lumen of the introducer sheath;

~~an expandable member~~ a stent, coupled to ~~supported by~~ the introducer sheath, that is sized and configured to be inserted into the obstruction of the blood vessel and to

expand from an unexpanded dimension to an expanded dimension that is greater than the unexpanded dimension, ~~such that the blood vessel is less obstructed after expansion of the expandable member within the blood vessel than before the expansion;~~

an expansion frame supported on a distal portion of the guide wire and, in a collapsed condition, configured to fit within the lumen of the introducer sheath and, in an expanded condition, configured to expand away from the longitudinal axis of the guide wire when not within the lumen of the introducer sheath; and

a filter mesh supported by the expansion frame, configured to expand with the guide wire and capture embolic debris freed from the obstruction during surgical procedures on the blood vessel.

130. **(Previously Presented)** The filter device of Claim 129, wherein the expansion frame includes a plurality of struts having spaces defined therebetween.

131. **(Previously Presented)** The filter device of Claim 130, wherein the filter mesh includes a plurality of openings smaller than the plurality of spaces defined between the struts.

132. **(Previously Presented)** The filter device of Claim 131, wherein the filter mesh is draped over and attached to the plurality of struts.

133. **(Previously Presented)** The filter device of Claim 132, wherein the struts extend radially and longitudinally with respect to a longitudinal axis of the guide wire.

134. **(Previously Presented)** The filter device of Claim 133, wherein the struts are circumferentially spaced apart from each other around the longitudinal axis of the guide wire.

135. **(Previously Presented)** The filter device of Claim 129, wherein the guide wire is configured to release the expansion frame from the lumen of the introducer sheath through relative sliding movement with the introducer sheath.

136. **(Previously Presented)** The filter device of Claim 129, wherein the guide wire has no lumen.

137. **(Previously Presented)** The filter device of Claim 136, wherein the introducer sheath supports a balloon.

138. **(Previously Presented)** The filter device of Claim 129, wherein the expansion frame, in its expanded condition, is configured to expand an external periphery of the filter mesh into circumscribing contact with an inner luminal wall of the blood vessel.

139. **(Previously Presented)** The filter device of Claim 138, wherein the mesh, when the expansion frame is in its expanded condition, spans an entire cross-section of the blood vessel so as to filter all blood passing therethrough.

140. **(Previously Presented)** The filter device of Claim 138, wherein the filter mesh material has an unbiased structure.

141. **(Previously Presented)** The filter device of Claim 140, wherein the filter mesh is incapable of self-expansion into circumscribing contact with the inner luminal wall of the blood vessel independent of urging by the expansion frame

142. **(Previously Presented)** The filter device of Claim 129, wherein the filter mesh is incapable of self-expansion independent of urging by the expansion frame.

143. **(Previously Presented)** The filter device of Claim 130, wherein the filter mesh is configured to fit within the lumen of the introducer sheath when the expansion frame is in a collapsed condition.

144. **(Previously Presented)** The filter device of Claim 143, wherein a free end of the filter mesh and the struts are substantially parallel to the guide wire in the collapsed condition.

145. **(Currently Amended)** A percutaneous vascular filter system comprising:

a guidewire having proximal and distal ends,

a filter comprising (a) a filter membrane having a distal portion and a proximal free end portion and (b) a filter membrane support structure extending from the flexible filter membrane distal portion to at least the flexible filter membrane proximal portion,

the filter concentrically arranged around said guidewire, the distal end of the filter being attached to the guidewire adjacent its distal end and the proximal end of the filter being attached to the guidewire; and

an expandable member stent, coupled to and extending around the filter~~guidewire proximal of the filter~~, that is sized and configured to be inserted into a stenotic lumen of a blood vessel upstream of the filter and to expand from an unexpanded dimension to an expanded dimension that is greater than the unexpanded dimension, ~~such that the stenotic lumen of the blood vessel is less stenotic after expansion of the expandable member within the blood vessel than before the expansion.~~

146. **(Currently Amended)** The filter device of Claim 79, ~~wherein the expandable member comprises~~further comprising an angioplasty balloon supported by the guide member.

147. **(Currently Amended)** The filter device of Claim 129, ~~wherein the expandable member comprises~~further comprising an angioplasty balloon supported by the introducer sheath and configured to expand the stent.

148. **(Currently Amended)** The filter device of Claim 145, ~~wherein the expandable member comprises~~further comprising an angioplasty balloon coupled to and extending around the guidewire and configured to expand the stent.

149. **(Previously Presented)** The filter device of Claim 125, wherein the struts are circumferentially spaced apart from each other around the longitudinal axis of the guide wire.

150. **(Previously Presented)** The filter device of Claim 149, wherein the filter mesh is supported by the struts and has a plurality of openings smaller than a plurality of spaces defined between the struts.

151. **(New)** An apparatus for performing a procedure in patient vasculature, the apparatus comprising:

a catheter defining a lumen;

a guidewire extending through the lumen of the catheter, the guidewire having distal and proximal ends;

a filter assembly mounted on the distal end of the guidewire and within the lumen of the catheter;

a balloon mounted around an outer surface of the catheter in communication with an inflation lumen coupled to the catheter; and

a stent mounted around the balloon.

152. (New) An apparatus of Claim 151, wherein the assembly is configured for the catheter to be inserted into the patient vasculature, the filter assembly deployed from the lumen of the catheter using the proximal end of the guidewire and the balloon inflated to expand and deploy the stent until secured within the patient vasculature upstream from the filter assembly and wherein the filter assembly captures debris downstream from deployment of the stent.